

REMARKS

1. Restriction Election

Applicants note that the Examiner has withdrawn the restriction as between Group I (Claims 1-8, 17 and 18) and Group III (Claims 9-16), and has accepted applicants' election of the Claims corresponding to Groups I and III.

2. Objections to the Specification

The Examiner has objected to the Specification as containing informalities and not indicating the status of the co-pending Parent Applications. The Specification has been amended to correct the informalities and update the status recited for the Parent Applications. Therefore, applicants believe the objections to the Specification have been overcome.

3. Claim Objections

The Examiner has objected to Claims 10 and 14 as containing informalities. Claims 10 and 14 have been amended to remove the informalities. Therefore, Applicants believe that the objections to the Claims have been overcome.

4. Rejections under 35 U.S.C. §112

The Examiner has rejected Claims 1, 9 and 17 as being indefinite. Applicant has amended Claims 1, 9 and 17 to more

clearly point out that the plating density improvement and dimpling reduction and elimination results from the previously-recited structure. Therefore, Applicant believes that the rejections under 35 U.S.C. §112 have been overcome.

5. Rejections under 35 U.S.C. §103

The Examiner has rejected Claims 1-4, 6-12, 14-18, 21 and 22 under 35 U.S.C. §103(a) as being obvious over Gebhardt, et al. (U.S. 5,928,767) in view of Takeuchi, et al. (U.S. 5,744,224). The Examiner has also rejected Claims 5 and 13 as being obvious over Gebhardt in view of Takeuchi, in further view of Edwards, et al. (U.S. 6,064,576). Applicants respectfully disagree. Independent Amended Claim 1 (and similarly other Independent Claims 9 and 17 as amended) recites:

"a dielectric layer defining a first surface of the substrate and having channels therein for addition of circuit material, the channels having sides extending to a plane defining the first surface of the substrate and having a bottom beneath the plane defining the first surface of the substrate, and wherein the channels include at least one land area formed from multiple channels within the substrate; and circuit material deposited within the channels for forming an electrical connection between electrical contacts of the at least one die and electrical terminal lands on the substrate, and **wherein the at least one land area forms a shape having non-channel regions within a perimeter of the land area**, whereby plating and etching current density of the circuit

material deposited within the at least one land area is reduced by presence of said non-channel regions and dimpling of the circuit material within the at least one land area is reduced or eliminated by presence of said non-channel regions." [bold text added for emphasis]

As stated by the Examiner in the Office Action, Gebhardt does not disclose a land area having non-channel regions, and neither does Takeuchi, nor does the combination of Gebhardt and Takeuchi suggest lands with non-channel regions.

Takeuchi discloses a die pad 10 having metallized patterns 14 that reduce thermal stress via improved thermal conduction. Takeuchi col. 4, lines 9-16. However, die pad 10 of Takeuchi is not a land "forming an electrical connection between electrical contacts of the at least one die and electrical terminal lands on the substrate", but rather is a mounting pad for the die itself. Gebhardt also does not disclose lands having non-channel areas, but rather discloses an alternative to a standard printed circuit board for mounting pre-encapsulated components.

With respect to the rejection of Claims 5 and 13 as being obvious over Gebhardt in view of Takeuchi, in further view of Edwards, for the reasons stated above, Gebhardt and Takeuchi do not teach the subject matter of any of the Claims, and neither does Edwards nor Gebhardt and Takeuchi in further view of Edwards.

For all of the reasons stated above, Applicants believe that all of the rejections and objections have been overcome.

CONCLUSION

In conclusion, Applicants respectfully submit that this Amendment, in view of the Remarks offered in conjunction therewith, is fully responsive to all aspects of the objections and rejections tendered by the Examiner in the Office Action. Applicants respectfully submit that they have demonstrated that the above-identified Patent Application, including Claims 1-18 and 21-22 is in condition for allowance. Such action is earnestly solicited. No fee is believed to be required in connection with this Amendment. However, if there are any fees incurred by this Amendment Letter, please deduct them from our deposit account No. 23-0830.

Respectfully Submitted,



Andrew M. Harris
Reg. No. 42,638
(706) 782-9683

Weiss, Moy & Harris, P.C.
4204 North Brown Ave.
Scottsdale, AZ 85251